BLIC POLICY PAMPHLET NO. 19
RRY D. GIDEONSE, EDITOR

LAND PLANNING

BY

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THE UNIVERSITY OF CHICAGO PRESS

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INTRODUCTION BY THE EDITOR

Recent political and judicial history as well as floods, draught, and dust storms have shifted national attention to land policy in a dramatic fashion. Land is private property, but it is also a great social heritage, and today few students of the problem are disposed to accept the old theory that the most profitable private use of the land is necessarily the best public policy. There is—as A. C. Pigou has recently urged with peculiar authority—"a danger that the self-interest of one generation may cause them to deplete [these] resources to satisfy trivial needs, with the result that future generations will be unable to call on them even for urgent needs. There is a clear *prima facie* case for state intervention to prevent this."[1]

This pamphlet should be required reading for those who, in the heat of recent political strife, are tempted to discuss all interference with laissez faire in land ownership as alien to American tradition. Traditional "land policies"—a form of "land planning"—culminated in the Homestead Act of 1862 and the reforms of 1891. The more systematic and comprehensive concern of Theodore Roosevelt's generation took the form of the "conservation" movement. The broad program now under consideration is an outgrowth of well-established historical trends.

Present land-use planning does not involve an attempt to plan *all* the uses of *all* the land but it is concerned with some of the more pressing and better understood problems of land use. Undeniable facts concerning impoverished agriculture, increasing tenancy, inroads of erosion, exhaustion of mineral resources, disappearance of normal recreational grounds, impaired watersheds, and dust storms point to the need for applying our best intelligence and effort while the opportunity still presents itself for effective preventive and constructive activity.

The author of this pamphlet is one of the leading representatives in American public service of the "career man." As-

[1] A. C. Pigou, *Economics in Practice*, pp. 120–21 (London: Macmillan, 1935).

sociation through several administrations with the federal government's agricultural activities has given him a unique grasp of the problems and possibilities in this field. Dr. Lewis C. Gray was formerly Chief of the Bureau of Agricultural Economics of the U.S. Department of Agriculture, and is at present Assistant Administrator in Charge of Land Utilization Division of the Resettlement Administration.

This is the nineteenth of a series of Public Policy Pamphlets which the University of Chicago Press is publishing. Frequently the scholarly journals give no attention at all to problems that have an acute public interest, while the ordinary magazines can print little but superficial comment. The University might well perform a valuable service by making available to the public whatever special training and information it may have at its disposal. The continuation of such a series will, of course, depend upon its reception by the public.

Perhaps it goes without saying that the authors of these pamphlets are individually responsible for their views and that they in no way involve the responsibility of the University of Chicago.

HARRY D. GIDEONSE

February 1, 1936

LAND PLANNING

THE PRINCIPLES OF LAND PLANNING[1]

The American people are developing a new and deeper interest in planning as the recent turn of events has revealed the tragedy of leaving many important business decisions to be made without considering public welfare. But planning is not a new practice; it has long been recognized as a necessary part of our social procedure. Individuals have planned as long as they have been confronted with the problems of living. Similarly, business men have always planned for their own concerns—in fact, modern business and industrial planning is undoubtedly planning of the most complex form found in this country. Nor is planning in and by governments a novelty. Certain functions of government are conducted upon a basis of planning very similar to that used by modern business. This is probably the essence of the plea for business in government—to make governmental functions more systematic, better planned.

But there has also developed another type of planning in this country which proceeds by subjecting certain critical points in business activity to public regulation. Other phases of business management are left to the discretion of individual business men or to corporations. Public planning of this sort may take the form of laying down certain standards of service, rules for trade practices, terms of doing business, hours, or wages, but the essential point in this procedure is that private activity is curbed at certain points where unrestrained private effort may impair the interest or welfare of the general public. The genius of this type of planning consists in the selection of the minimum of strategic points in business activity, to be subject to public control, which will safeguard the public interest. The necessary control may require public ownership; yet

[1] This pamphlet deals largely with the broader aspects of land-use planning. The subject might also be discussed from the point of view of planning for the use of specific areas of land. An example of the latter type of treatment is *Land Use in Northern Minnesota*, by O. B. Jesness and R. I. Nowell (University of Minnesota Press, 1935).

the intention of this type of direction is to permit the greatest latitude of private determination and judgment which is consistent with the protection of public welfare. It is in this sense that "planning" constitutes an attempt of the American people to find an intermediate ground between laissez faire capitalism and socialism.

Planning is a complex concept. In its structural aspects it involves the co-ordination and synchronization of subordinate fields of activity. Thus, national planning requires the co-ordination of industrial planning, fiscal planning, land planning, and planning in numerous other fields. Land planning in turn involves the integration of a great variety of separate fields of planning or directive effort. Thus, an adequate program of public forests is an essential phase of a well-rounded national land plan; but the selection of areas for public forests should be made with due reference to other possible uses of land, such as grazing, as well as with reference to other factors, such as local institutional pattern, the pattern of local government, and the local revenue system. If the selection of lands for public forests is made merely with a view to the cheapness of the land, the character of the cover, and the adaptability to forest growth, other essential considerations in an adequate land-use plan may be sacrificed. A policy for regrouping population, such as the Subsistence Homestead policy and the larger program for shifting stranded populations, should be closely integrated with plans for the location and development of forests and the removal of poor land from cultivation, and should give consideration to the existing institutional pattern.

As a functional concept, planning has several different meanings. It may include the determination of policy, the definition of objectives, or the selection of procedures. Any one of these steps may be approached in a variety of ways. For purposes of this discussion a distinction will be drawn between two different procedures only. Granted a statement of policy, and assuming that the objectives have been worked out, there still remains a choice of method as to how the objective should be approached. One method may be termed engineering, where the objective is approached in a direct, undeviating

route. In this type of approach a blueprint of detailed steps is possible. Questions of authority or jurisdiction do not arise, because all of these matters have been solved at the outset by securing full control. In government planning this means, essentially, government ownership.

Another method of procedure may be termed political or democratic. Once the objective has been determined under some particular policy, the steps in attaining that objective may be taken indirectly. This may be by the enactment of legislation to create a situation where persons will voluntarily choose to do the thing desired. Perhaps under legislative authority some government agency will, in certain specific areas, take steps which create an opportunity for the individual, wherein he will likely choose to act along lines leading toward the general objective. Here two features are distinct: (1) social goals are achieved by a series of individual choices, voluntarily made; and (2) the process is continually subjected to check by the people through democratic legislative processes.

Finally, all of the decisions on the complex problems of planning in this country must be made within the authority of the constitutional powers of the various governments, and with due regard to the proper sphere of the national, state, and local governments. Hence, persons responsible for the formulation of policy, and for the direction of the planning processes, must keep within definite lines of authority. However, the final, exact limit of this authority is a judicial question, about which social planners can only hazard a guess when embarking upon some new venture. By a process of trial and error these limits will be gradually determined.

Land planning, then, as an instance of social planning, must be carried on with due regard to the complexities of the planning process, and with full realization of the implications of certain basic concepts. Land planning is at once a part of the larger whole social planning, and is a composite of a great number of subordinate, even though vast, fields of planning for particular phases of land use. Planning with reference to land has, then, a distinct history, particular lines of procedures, and specific problems with which to cope.

It may be said that we have always had some sort of plan for the land, for land policy was one of the major considerations of early legislation. This early land planning, however, may be termed land-disposal planning as against land-use planning, since, in the early phases of our national history, we acted upon the principle that once all land was in private ownership it would be wisely used. It required the impoverishment of agriculture and rural life in numerous areas, the threat of exhaustion of mineral resources and timber, the inroads of erosion, the disappearance of natural recreational grounds, the impairment of watersheds, and even dust storms to make us conscious of the necessity for wiser planning of the uses of land.

Land-use planning, as currently conceived, does not involve the attempt to plan *all* the uses of *all* the land. This is neither desired nor needed. But an attempt is being made to deal with a few of the more pressing and better understood problems of land use. About these we have sufficient understanding and comprehension so that we can make a start. We know, for example, the approximate rate of forest consumption and forest growth, and that certain positive steps must be taken to insure a reasonably adequate supply of forest products. Soil engineers have measures sufficiently accurate to calculate what unrestrained erosion losses, characteristic of our recent past, mean in terms of future soil depletion. We know, approximately, those regions where families haven't a ghost of a chance to succeed at farming. At this stage of land planning we are attempting to deal with those problems which are definitely established and fairly well analyzed, and to take measures to prevent the degeneration of other regions to such a level of hopelessness.

In the adoption of either corrective or preventive measures, the details of which are discussed later, no single factor is of greater significance than private property in land. The laws of real property are of long standing, backed by powerful precedents. The development of this branch of law reflects the long struggle to make land freely alienable, an object of purchase and sale, with which a man might do as he wished. To be sure, the state did not relinquish all control over the

land or interest therein; the state retained the power to tax, the police power, and the power of eminent domain. Land planning, however, must proceed within the limitations of these powers in so far as it is necessary to direct the use of privately owned land. The limitations of the regulative powers of taxation and the police power as means of controlling land use are so serious that public purchase may be prerequisite to effective control in solving the more serious problems.

Within this framework of general problems and policies, land planning is gradually emerging as a significant social force. We have made some progress in planning in separate fields of activity, and in the integration of certain closely related horizons, but there is danger that the planning movement will become bogged down by an attempt to make it at once logically all-inclusive. It is obvious, of course, that every phase of life is interrelated with every other phase, but there is probably no single mind or group of minds capable of shaping all of these relationships into a symmetrical pattern. At best we can only hope for a rough-and-ready co-ordination as we go forward on the several fronts. In fact, a number of the subhorizons which must constitute essential segments in the general horizon of land planning are themselves in process of achieving a greater degree of coherence. Moreover, land planning is the application, more or less, of well-defined policies. It must change in scope and character as policies change; it is, therefore, dynamic, not static. It is the process of intelligent adjustment of the uses of land to the gradually changing conceptions of social well-being, rather than the making of a pattern good for all time.

There are those who believe it possible to start at the top with a sort of superboard, and to formulate an economic and social pattern for the nation, which, through the action of regional and local boards or other planning instrumentalities, will give form and character to a pattern of life throughout the nation. Such a conception is both impracticable and contrary to the habitual mode of thought and action of the American people. We are essentially a practical people, exerting ourselves to meet special exigencies without concerning ourselves with the symmetry or consistency of the whole pattern

of policy or mode of action. For a long time to come, economic and social planning will be essentially fragmentary. For a long time we shall recognize various horizons in planning, and the relationships between them will be neither intimate nor closely integrated in practice.

PAST LAND POLICIES

The point of departure in considering past land policies may be taken in the inchoate period when national land policy was shaped almost entirely by the forces of individualism. The long battle between the greed of speculative capitalism and the land hunger of the frontiersmen in the shaping of our earlier land policies need not be recounted. Both were dominated by the all-impelling motives of individualistic self-advancement. While the frontier interest gradually forced substantial concessions to its requirements, culminating in the Homestead Act of 1862, the professional land speculator continued to be favored by federal land policies until the substantial reforms of 1891. By that time so large a proportion of the more desirable lands were in private ownership that the federal government had largely lost its opportunity to influence the utilization of land from the peculiarly favorable position of public proprietorship. The land speculator was no longer dependent largely on public policy.

If, in the long period prior to the beginning of the twentieth century, the question of the general welfare was raised in the shaping of national land policy, it was usually answered with the easy formula of the laissez faire philosophy—that the operation of individual self-interest through private proprietorship would bring about maximum production of wealth, its satisfactory distribution, sound methods of land utilization, and a wholesome community life. It is true that land speculation, particularly professional speculation, was deplored, but little was done to check it. Here and there a protest was raised against the laissez faire doctrine as applied to land. George Henry Evans, in the forties, recognized that the homestead system alone would not insure a democratic system of land tenure. Accordingly he brought forward the proposal of the inalienability of the homestead, a doctrine which

had little influence except in the homestead-exemption laws, particularly of Texas. In the last three decades of the century in strident tones Henry George called attention to the tendencies toward concentration of ownership, but his proposed panacea was too one-sided and unrealistic to influence profoundly the course of public-land policy.

Until the recent activities of the present administration, the most outstanding modifications in the federal land policy have applied largely to non-agricultural lands. These new policies were mainly the outgrowth of the conservation movement, born during the first decade of the present century. It was a product of the prevailing optimistic outlook regarding population growth, the growing recognition (somewhat exaggerated) of the limited remaining supply of timber and minerals, and the dissatisfaction of the embryonic liberalism of that time with the unequal distribution of wealth as promoted by our laissez faire land policies applicable to timber and mineral lands.

Fortunately, it led to the reservation of 160,000,000 acres of public land in the West for administration as national forests, the setting aside of certain areas of unusual scenic, scientific, or historical interest as national parks and monuments, and the reservation of certain areas in the public domain particularly adapted to game management. In these policies, for the first time, we encounter a substantial recognition of the fact that individualistic ownership and utilization of land may not always be conducive to the general welfare. Little by little, the principle of public ownership and administration of certain types of land has been extended to include not only the retention of such types of land still in public ownership, but the federal purchase of lands from private owners. The Weeks Act of 1911 authorized the acquisition of forest lands to protect the headwaters of navigable streams, and the Clark-McNary Act authorized the federal purchase of land for timber production, but until the advent of the present administration these policies had been applied on so small a scale that less than 5,000,000 acres had been purchased. A number of states have adopted policies to reorganize timber

lands for public forests and parks, and several states have made considerable progress in this reorganization.

Meanwhile, the professional foresters were gradually abandoning the idea that by modifications in taxation, public fire protection, and the creation of other favorable conditions, private timber owners could be brought to adopt conservational methods to a sufficient extent to insure an adequate permanent supply of forest products. They even began to ask why the remaining areas of good timber should likewise be wrecked and thrown back to the public as tax-delinquent lands, thus accentuating the already serious lack of sound geographic distribution of mature or nearly mature timber.

While there had been considerable progress in the evolution of general-welfare policies for non-agricultural land before the advent of the New Deal, there had, in fact, been no decided change in the agricultural-land policy of the nation. The dry-land homestead acts were merely a belated and inadequate adjustment of the homestead principle to meet semiarid conditions. The 640-acre act made a gesture toward land classification, but it operated more to prevent homesteaders under the act from acquiring arable lands, and to restrict them to lands suitable for grazing, than to protect them against settling on units wholly unsuited to maintain a sufficient standard of living. The federal reclamation program, launched in 1902, was conceived merely as a means of extending the opportunities of homsteading to lands too arid for cultivation. It received special emphasis under the then dominant neo-Malthusianism, and the conviction that the rapid increase of the nation's population would continue indefinitely. It was soon modified, however, to apply also to lands in private ownership, and under the impelling urge of the land speculator, the chamber of commerce, and the railways, it frequently became more local than national in aim and character. Behind a thin camouflage of nationalistic argument, it operated all too frequently to benefit land speculators and other private interests to a greater extent than farmers. While creating a number of western communities which would not otherwise have existed, in many of them it saddled the settlers with an impossible burden of debt. Until recently,

likewise, policies on Indian lands have been shaped largely in accordance with the dominant principle of individual profit—all too frequently to the white man's profit. The same pressure of individualistic interests led to the steady refusal of the federal government to develop a constructive policy of land use for the unallotted and unreserved public domain.

However, there is now a strong conviction in both the Department of Agriculture and the Department of the Interior that the public domain should be retained in federal ownership, and should be administered with due reference to the conservation of the forage, watershed protection, and the stabilization of the range industry. It is also a widely held conviction that the homestead policy, as now operative, is, and has been for some time, seriously detrimental, as well as inconsistent with the new policies, and that it should be restricted in application to lands physically and economically adapted to arable agriculture—a restriction which would make it virtually non-operative. The policy of encouraging the settlement of people on submarginal lands in the public domains through the homestead acts is clearly inconsistent with the new policy of retiring poor agricultural lands, and inconsistent as well with the agricultural adjustment policies.

RECENT ACTIVITIES IN LAND PLANNING

Interest in land-use problems was stimulated by the long period of distress of agriculture in the twenties. This interest culminated in the calling, by Secretary of Agriculture Arthur M. Hyde, of a National Conference on Land Utilization, in Chicago in November of 1931. The attendance at the conference included representatives of practically all organizations with an active interest in land-utilization problems, such as the federal Departments of Agriculture and the Interior, state agricultural colleges, farm organizations, farm-credit agencies, and a host of others. This conference adopted a series of recommendations on many phases of land-use policy, some of which are today the basis of federal land-program activities. In addition, a National Land Use Planning Committee, consisting of representatives of federal bureaus concerned with land-use problems and of land-grant colleges, and

a National Advisory and Legislative Committee on Land Use, whose membership was drawn from agricultural, forestry, and business organizations, were recommended, together with a statement as to the panel of these groups.

These groups were created in 1932, and made a number of significant reports on special land-use problems, including that of the desirable extent of the public-land acquisition. Following the appointment of the National Planning Board of the Public Works Administration in 1933, these former committees were dissolved, and some land-planning functions were assumed by the Planning Board. On June 30, 1934, the President established the National Resources Board as successor to the National Planning Board.

The first task of the Resources Board was to prepare a report on land and water resources, to be ready by December 1, 1934. Three technical subcommittees—on land, water, and mineral planning—assumed the immediate responsibility for preparing the report. To assist the land-planning committee, the National Resources Board provided state and regional land consultants. The National Resources Board has since been supplanted by the National Resources Committee. The land-planning committee has been continued, as have the land-planning specialists in the several states. In addition, the National Resources Committee has undertaken a survey of all current land-research and land-purchase plans. This is essential to the achievement of a broadly co-ordinated and integrated program of land-use planning.

This brief survey of the various federal organizations, recently concerned primarily with land planning, gives some indication as to the extent of such activities both in amount and in time. Interest in land planning grew out of economic maladjustments in agriculture and other major land-using industries, and resulted in the calling of a national conference and the creation of a Land Use Planning Committee as early as 1931. The work of the present national administration, under the New Deal, was an outgrowth of this earlier effort. However, land planning has received greater emphasis and support since 1932 than ever before in the history of the country.

The year 1934–35 will be remembered as a significant one in the history of American land policy. On the one hand the government has taken definite action, indicating the dominance of a new viewpoint toward national land problems. At the same time, nature, through a visitation of extreme suffering in the form of drought, and attendant dust storms, has focused the attention of the American people as never before on the pressing nature of at least certain aspects of our land problem, and thereby set in motion the necessary process of public awakening to the need for governmental action.

Three major elements in the recent land policy and planning of the federal government deserve further comment: the Taylor Grazing Act, the inventory of national resources by the National Resources Board, and the federal land program.

The Taylor Grazing Act, passed in 1934, reversed the policy of 150 years toward the settlement of the public domain. Following a period of several years of educational work, the passage of this Act implied a recognition of the fact that the areas of good farm land in the public domain were practically exhausted, and that further homesteading of these lands could not be encouraged if proper consideration were given to the failures which such settlement would most likely entail. The whole of the public domain was closed to further settlement, pending a complete examination and classification of all available lands to determine what their best use might be. It is intended that all lands which do not qualify for agricultural occupation or some higher form of use will be organized into grazing districts, so that they may be utilized to their best advantage, and at the same time, be subject to control sufficient to conserve the grass cover.

The land report of the National Resources Board is significant both for the content of the report and the method of preparation. In content, it was essentially a national plan for use of land resources. This phase will be treated separately in the next section. In method, the report marks a new milestone in the practices of land planning.

The contributions to the report of twelve bureaus or agencies of the federal government were a distinct achievement in co-operation and co-ordination. This is in itself a definite ad-

vance in planning technique. However, the working relationship between federal, state, and local organization may have even greater significance for the future of land planning.

A great number of state agencies contributed to the report, including state agricultural colleges, experiment stations, extension services, conservation departments, and state planning boards. The land-planning consultants of the National Resources Board were responsible for assembling and analyzing the material provided by these state agencies. Consultants submitted reports on problem areas of maladjusted land use, and proposals for remedies which were based upon some independent research, the judgment of experts in the state organizations and of certain public servants in local communities, such as county agricultural agents and other county officials.

This procedure is significant in that it represents a clear recognition of certain basic principles which must be observed if land planning is to be effectively developed in this country. It must be land planning from "the ground up," it must include devices for receiving and co-ordinating the judgment of persons who know local areas in an intimate way, and, finally, it must have the support of the people nearest the soil. The function of a federal planning agency is, then, to harmonize and integrate the recommendations of local and state representatives, to search out the implications for, and to formulate federal policy.

TOWARD A LAND PLAN

The report of the Land Planning Committee of the National Resources Board is essentially a plan for the use of the land. It is a plan in the sense of setting forth the objectives of a reasonable land-use program, rather than a detailed outline of the procedure to be followed in attaining those objectives. However, considerable attention is given to various methods of handling the problems involved in land-use adjustments. Inasmuch as this report represents one of the major efforts at land planning in this country, it seems advisable to outline briefly the organization, staff, and personnel involved, and the conclusions which resulted.

Before the preparation of a report for the National Resources Board on land utilization and policy was authorized, the Land Policy Section of the Agricultural Adjustment Administration, together with the Division of Land Economics of the Bureau of Agricultural Economics, had been working for some time preparing a report on agricultural-land policy. These two organizations gave to the comprehensive task both their personnel and accumulated experience.

The first task was to examine basic conditions which might influence future land requirements. The outlook for population, both from the standpoint of the nation as a whole and that of the different states, was assigned to the Scripps Foundation for Population Research. The outlook for industry in its relation to land use and land policies was undertaken by the section of the Agricultural Adjustment Administration which deals with the relation of industry to agriculture. The outlook for mechanization in agriculture was undertaken by the Bureau of Agricultural Engineering.

The second section of the report pertains to land requirements for the various major uses. Here estimates were made of the land requirements of agriculture, grazing, pasture, forestry, wild life, recreation, and other major uses. For the agricultural portion of this section, an outline of the trends in consumption of various types of farm products was prepared by the Division of Land Economics in conjunction with the Division of Production Planning of the Agricultural Adjustment Administration. An analysis of the agricultural outlook with reference to foreign trade was undertaken by another section of the Agricultural Adjustment Administration. Trends in production efficiency were analyzed by the Division of Land Economics, the outlook for pasture requirements and resources by the Grazing Division of the Forest Service.

A map of irrigable lands, classified by ranges of cost, was prepared by the Bureau of Agricultural Engineering, and a study was made of the potential drainable lands of the United States, and of forest lands which might be available for agriculture after clearing.

Naturally, the Forest Service made the estimate of forest land requirements, and the National Park Service of the re-

quirements for recreation. The latter study took into account not only the requirements for national parks, but for all types of outdoor recreation whether under local, state, or national administration. Likewise, the Biological Survey prepared a statement of the lands needed and available for wild life from the broad standpoint of the country as a whole.

The third section of the report pertains to local maladjustments in land use, and the policies needed for correcting them. In approaching this question, there appeared to be a great need of more adequate data as to the location of problem areas in the country. The land-planning consultants undertook to get from local sources as good a picture as possible of these areas and their approximate boundaries. In the very short time available, these men could not undertake a field survey, but they did get the available material from the state agricultural colleges, the experiment stations, the state conservation boards, etc. Although these judgment results will have to be refined later, the picture they now present is very much better than would have been the case if an attempt had been made to set it up in Washington without getting local information. This procedure, furthermore, appears to have been generally justified by the interest that it has stimulated in agricultural colleges and in experiment stations in this most important land-planning work.

SOME MAJOR FACTORS INFLUENCING LAND REQUIREMENTS

The unprecedented growth in population of the United States, from approximately four million people along the Atlantic seaboard in 1790 to the one hundred and twenty-three million spread across the continent today, and the expectation that this increase will continue, has been an essential element in our national calculations and policies. The extraordinary growth in industry, commerce, and agriculture has been stimulated by this growth in population. Both immigration from abroad and birth-rate of the resident population of the United States have influenced the phenomenal expansion in numbers of American people.

Since the World War we have entered on a policy of immigration restriction. The net increase due to immigration under

the quota law, which went into effect on July 1, 1924, averaged very close to 250,000 annually up to 1929. With the depression and administrative restrictions, the net immigration declined to 100,000 in 1930; then, from 1931 to the present, with the severe unemployment prevailing in this country, the number of persons leaving the United States to make their homes elsewhere has exceeded the number of those who have come to make their homes here. It is probable that immigration restrictions will continue, and that our population will increase very little if at all from that source.

More important as a factor affecting future population is the birth-rate, which was high in this nation in the past, population doubling every quarter-century up to the Civil War. The decline in the birth-rate, however, began as early as 1820, and has been rather constantly declining ever since. In spite of the decline, however, the actual number of births continued to increase for a century after the decline in the rate. This increase in births was due to the increase in the number of women of child-bearing age. For the years 1922–29 there was an average of 50,000 fewer births each year; from 1930–34 births have averaged 100,000 less each year. The effect of this decline in the birth-rate has already shown its effect by the decreasing enrolment in the lower grades of the public schools.

The outlook for a continued decline in the birth-rate seems quite clear. There is, however, uncertainty with respect to the rate of decline. Several factors affect the birth-rate; the first may be called the rural-urban factor. The birth-rate of the farm population is about twice that found in cities having over 100,000 population. These larger cities would have to have a birth-rate 30 to 35 per cent greater than at present to maintain their population. The increase in the farm population, on the other hand, is great enough to provide a surplus of 40 to 50 per cent over the number required to maintain the present population on farms.

Owing to this difference in rural and urban birth-rates, the rate of migration of population from the farms and rural villages is an important influence on the birth-rate. The birth-rate of rural families who have migrated to the cities tends to be reduced to urban levels. If, therefore, the migration to the

cities should again occur to the extent that it did during 1920–30, there would be a larger proportion of the population with a low birth-rate than if migration were not on such a scale. The city population also has a higher death-rate, and in this way the increase in migration to the cities would tend to reduce population.

A third factor, in addition to the rural-urban birth-rate and migration between country and city, is the social or economic status of the families. Families of professional men have, on the average, fewer children than business men, business men fewer than skilled laborers, and skilled laborers fewer than unskilled laborers. Unskilled laborers have about one-fourth more children than the same number of families of skilled laborers; skilled laborers have one-quarter to one-third more than those of business men; and the families of business men 5 to 10 per cent more than those of professional men.

These factors must be taken into account, and assumptions must be made with respect to them if a forecast of population is to be made. Two estimates of future population were made for the National Resources Board Report. One was made on the assumption that there would be no net migration from country to city or between states; the second assumption was that these movements would be the same as for the decade 1920–30. Other assumptions underlying these estimates are: (1) that the birth-rate in 1960 will be about 70 per cent of the birth-rate of 1930; (2) that five years will be added to the average length of life; and (3) that there will be no increase from foreign immigration.

If these assumptions are fulfilled, by 1960 the population will be growing very slowly; indeed, the increase in the decades 1930 to 1960 will be but little greater than the increase which occurred between 1920 and 1930. The peak of population will be reached soon after 1960. The subsequent decline will not be great at first. The prospects are that the population will remain within 15 per cent of the present population for twenty-five to fifty years.

If migration to the cities were resumed, there would be a considerable increase in urban population, and a slight decrease in farm population. On the other hand, if rural urban

migration is not resumed, the farm population will increase by 50 per cent.

The industrial outlook and land utilization.—Our future land policies, particularly those with respect to agricultural land, are related not only to the outlook for population growth, but to the industrial outlook. Unemployment in industry suspends the flow of surplus farm population to other employments, and to some extent stimulates migration from city to country. The agricultural situation is aggravated by a reduction in real farm income, an increase in the aggregate farm output, the lessening of urban requirements for farm products, and a weakening in the effective demand for farm products. The industrial outlook will obviously affect the extent and character of land requirements, and will affect the policies to be followed with respect to land tenure and settlement.

That a very great industrial expansion is possible is evident when it is realized that current industrial production is much less than that for 1929, or even that for the years 1923–25. Greater industrial activity, if it could be attained, would materially increase urban demand for agricultural products; this would justify a larger acreage of agricultural land in production, and at the same time would drain off some of the rural people for work in the cities.

However, it is by no means clear how this increased industrial activity might be brought about. For the next few years it appears doubtful that activity will increase to the point where the surplus population from the farms will be absorbed in other industries, or that a greatly increased demand for agricultural products will be realized.

Changes in diet.—The land required for agricultural use will be affected by the per capita consumption of agricultural products. There have been several outstanding changes in the diet of the American people during the present century, the one having the greatest effect on land utilization being the decline in the per capita consumption of cereals. The greatest consumption decline has been of wheat flour and cornmeal. If the per capita consumption of cereals were as great today as in 1900, 20,000,000 more acres would be needed to provide for the present population. About 1.9 acres of crop land are

required per person to feed the people of the United States. This is about the same amount as would be required to produce the food necessary for the "adequate diet at moderate cost" suggested by the investigators of the Bureau of Home Economics. Many persons consume the food produced on more than this number of acres, and many consume less. A "liberal diet" suggested by the same investigators would require 2.3 acres per person, or one-fifth more land per person. In additional to this, people of the United States consume non-food products from 0.2 acres, and work stock consume the feed from about 0.4 acres of crop land. The total is very close to 2½ acres per person. There are no decided trends in food or fiber consumption habits now apparent which indicate that this requirement will be materially changed in the near future.

Exports and land use.—Approximately one-sixth of the harvested crop land of the country was required to produce the exports of agricultural products during the five-year period 1925–26 to 1929–30. Nearly one-half—47 per cent—was used in the production of wheat.

The acreage required to produce the net exports of agricultural products reached a peak about the beginning of the century, and then declined. Stimulated by the World War, another peak was reached in 1921–22, with a decline to less than 40,000,000 acres registered in 1932–33. It is estimated that 80,000,000 acres were required to produce the exports for 1922.

The reduction of trade barriers and recovery from the present business depression should afford possibilities for increased exports. However, competition from Canada, Argentina, and Australia, countries which have developed more recently than the United States, is likely to be somewhat more important in affecting the export possibilities of our agricultural products in the future than in the past. Another new factor which will affect our future outlook for exports is the population prospect of the countries of northwestern Europe. Those countries are the ones which take the greater bulk of our agricultural exports. As is true in this country, they are witnessing a rapid decline in their birth-rates. The British

Isles, France, and the Scandinavian countries are now practically at the point of maximum population. With decreased population growth, the only hope for increased consumption in the countries of Europe to which our agricultural exports go lies in the possibilities of increased per capita consumption. Of all the factors affecting the prospective need for land in this country, the influences of exports are most uncertain and difficult to appraise.

The prospects for increased productivity and efficiency in the use of land.—Increasing the acre yield of our more important crops, and increasing the carrying capacity of pasture, are two possibilities which may greatly influence land requirements. Judged by past changes in yields, no notable increase in production per acre is to be expected. The yield per acre of the two principal grains have shown no tendency since 1866 to increase for the period for which yields are available. The same can be said of tame hay since 1900; likewise of cotton. While during the period 1915 to 1930 there was a cycle of low yields which may be attributed principally to the boll weevil, the yields during the last four years have increased to equal the trend prior to the boll weevil infestation.

Acre yields may be increased through the use of fertilizer, better tillage, reduction of losses due to insects and disease, and improved seed. These factors have been at work in the past, but not enough in the principal crops to offset the factors tending to decrease yields—principally soil erosion and other forms of soil depletion which will be discussed later.

The production of animal food products requires about two-thirds of the total crop land for our food production. This fact is sufficient to show that the efficiency with which animals convert feed into livestock products will greatly affect the need for land. Improvements in breeding, the culling of inferior producers, and more scientific rationing of animals have reduced, and are likely to reduce further, the acreage necessary to produce a unit of our animal foodstuffs.

Another way in which the acres needed for agricultural products may be increased or decreased is by substituting more intensive crops for less intensive crops, or vice versa. Substituting, for instance, corn for hay, or vegetables for corn,

will furnish more food and feed per acre. In order to check severe losses of soil from erosion or other causes, shifting considerable land from intensive crops, such as corn or cotton, to less intensive uses, such as meadows or pasture, is likely to be required.

Balancing the tendency of the various factors affecting the productivity of crop land and arable pasture, the indications are that there will probably be no great change in the average yield per acre of our arable land. With respect to our range land and non-arable pasture, however, it is probable that the productivity has been diminishing. Little has been done so far to improve pastures. Experimental work has been carried on, and a few demonstrations of pasture improvement have been made, but fertilization and improved practices have not been widely adopted. The possibilities here are very great.

The need for reduction in crop land.—The preceding discussion, although not exhaustive, is intended to show the complexity and uncertainty of the factors affecting our need of land for agricultural production. Taking all of these into consideration, what is the probable acreage of land needed for crop production—do we need more or less land in crops? Without a very decided improvement in both domestic and foreign demand for agricultural products, the prospects are that it will be necessary to decrease the acreage of crop land harvested for the next few years. By 1945 the prospect is that we will need an acreage equal to that of the present, and by 1960 it will probably be necessary to add a considerable acreage. In 1929 there were 359,000,000 acres of land from which crops were harvested. Land needed to produce the crops for domestic consumption and export in 1940 is estimated to lie in the range of from 348,000,000 to 354,000,000 acres, and in 1960 from 374,000,000 to 386,000,000 acres. The minimum and maximum figures are given because of the many uncertain factors, especially the uncertain prospects for export. The minimum figures are those likely to prevail if there is no improvement in the underlying conditions. The maximum figures are quite definitely within the range of possibility.

Agricultural land resources.—Our agricultural land resources are ample for even the maximum acreage of crops which now appears likely. Of the 1,900,000,000 acres of land in the United States, slightly more than one-half—987,000,000 acres—is in farms, and slightly more than one-fifth—413,000,000 acres—is in crop land, including land on which crops have failed, and crop land lying idle or fallow.

The quality of our land is of greater significance than the extent. The best land is, in general, selected for crop production. The Soil Survey of the Federal Bureau of Chemistry and Soils has been engaged for years, in co-operation with the agricultural experiment stations, in classifying the soils. Recently they have developed a system of grading the soil types according to their natural productivity. The late Dr. Curtis F. Marbut has made an estimate of the amount of land falling into five grades of natural productivity. According to this estimate, 5 per cent of the land area, 101,000,000 acres, has grade 1 soil, the most fertile soil; approximately one-tenth of the area, 211,000,000 acres, consists of grade 2 soil; slightly less than one-fifth of the land falls within each of the grades 3 and 4; and nearly one-half, 46 per cent, falls in grade 5. Grade 5 is land which, under its present condition, cannot be used for crop production with ordinary methods. The present acreage of all crop land exceeds the area of grade 1 and grade 2 land, and those two grades are probably largely devoted to crop production or in rotation with pasture. Some of the crop land must of necessity be on grade 3 land, and a small part on grade 4 land.

Although there is little land of the best grades not utilized for crop production, it is estimated that there are 100,000,000 acres of land not now in farms which, if they were drained, irrigated, or cleared of stumps, would be superior to some of the poorer land now in crop production. Thus, there is ample land to provide for the increase in crop land needed and some to replace the poorest land now in cultivation.

It is probable that the 55,000,000 acres of new crop land which it is estimated will be needed by 1960 will be distributed approximately as follows: 3,000,000 acres will be irrigated;

10,000,000 acres will be drained; another 10,000,000 acres will be cleared, but will not require drainage; and the remaining 32,000,000 acres will be taken from land which is now plowable pasture. This acreage of plowable pasture is no larger than the acreage which was plowed up for crops in the decade between 1920 and 1930.

There will also be a reverse shift of some of the poorer and some of the eroding crop land to pasture land. Any loss in sustenance by the decline in the acres of pasture land could be more than offset by pasture improvement. The existing land resources for crop and livestock production are ample for the prospective future population. The depletion of these resources and their future maintenance will be discussed later.

Forest land requirements.—That forest land provides lumber, pulpwood, firewood, and other timber products is commonly realized; the fact that forest land provides other services, and that over considerable areas these other services are much more important than the production of timber, is not so widely recognized. Forests protect soils on steep slopes from erosion, equalize the flow of streams and the supply of ground water, protect human habitations to a considerable extent from the effect of severe wind, heat, and cold, and are, further, the homes of much of our wild life. Each year because of their attractions more and more persons are finding rest and recreation in the forests. These services of forest land cannot be measured in monetary terms. They must be considered in making provision for future requirements of forest land.

The amount of timber products consumed is influenced by the available supply. Many countries with relatively high planes of living use much less timber than the United States, while other countries with more abundant supplies of timber products consume considerably more. The future consumption of forest products will depend, then, on the amount of land available and the cost of establishing and maintaining the forests in relation both to tangible and intangible values which may be secured from the forests.

The trend of lumber consumption has declined greatly since 1906, and wood fuel consumption is now less than one-half that of a few decades ago. The consumption of paper and

other pulp products has increased tremendously, and at present the United States is supplying less than one-half of its pulpwood requirements. The number of cubic feet of timber required for other miscellaneous uses prior to the depression was greater than the amount needed for pulpwood, and equal to more than one-sixth of the total timber requirements for construction use. There is an additional drain on the forests by fire, insects, and disease, and in the necessary operations of securing naval stores. The total drain on the forests of this country is more than 16,000,000,000 cubic feet annually.

As in crop production, the yield of forest products can be greatly increased by proper methods of management and by improved practices. The type of forest management which should be adopted depends on the probable demand for forest products and the other services to be rendered by forests, and by the quality of the land. It is estimated that by adopting forestry management adapted to the quality of the land, a total of 18,000,000,000 cubic feet of timber could be produced on 509,000,000 acres of land. There are at present 615,000,000 acres of forest land; 109,000,000 acres being chiefly valuable for other uses than timber production; 45,000,000 acres more should be devoted exclusively to recreation rather than timber production. These deductions, in addition to any land which may be taken from forests and devoted to crop production (which land probably will not exceed 20,000,000 acres), will reduce the acreage now in forest available for timber production to less than the 509,000,000 acres. Additional acreage probably will be secured from land not now devoted to timber production. There are over 20,000,000 acres of crop land and 30,000,000 acres of pasture land on farms so poor that their operators cannot hope to make a decent living. Much of this land should be devoted to forestry. There is also a substantial area of poor and badly eroding land on better farms which should be devoted to timber production. As with agricultural products, there is sufficient land to provide all the timber products likely to be consumed, if it is adequately conserved and intelligently utilized.

But there is another point which must be recognized. It will take at least forty years to build the forest land up to the

place where it will produce annually the 18,000,000 cubic feet possible, or even the 16,000,000 cubic feet normally expected to be consumed. At the present time the rate of growth is less than 55 per cent of the amount of timber consumed annually before the depression. The rate for saw timber is only 20 per cent of the consumption. We are still drawing on a reserve built up for centuries before the occupation of the continent by the white man. Between the exhaustion of this virgin supply and the time when the second-growth forests come into full production, there will be a period of low timber consumption. If the program of forest production is carried through, and larger supplies become available, consumption will again increase, but probably not to the extent that it would if it were not necessary to adjust to the intervening period of scarcity.

Land needed for recreational use.—Upon reflection, the difficulties of determining the area of land needed for recreational use will readily be understood. The various forms of recreation have widely different space requirements. Then, too, all land has, or may have, some usefulness for recreation which will be secondary to other uses. The effective demand of the people for the different forms of recreation will greatly influence the extent of land for recreation as either a primary or secondary use of the land.

An important consideration is the distribution of population. The population of the United States is very unevenly distributed—nearly 57 per cent lives in the northeastern states north of the Ohio River and east of the Mississippi River, and occupies but little more than 13 per cent of the land area; while the states in the Rocky Mountain division have but 3 per cent of the population, and 28 per cent of the land area.

Though it is to be hoped that the enforced leisure through unemployment will be done away with, it is both highly desirable and probable that leisure time will be increased through the development of labor-saving devices and scientific management of industry. It is of paramount importance to the welfare of the nation that this leisure be employed in ways which will be beneficial to individuals and to society.

Greater emphasis should, therefore, be placed on the use of land for recreational purposes.

Every division of government—national, state, and local—has had and should continue to have a part in providing parks and recreational areas for its citizens. Few cities, counties, or states have made adequate provisions for the recreational needs of their people. Municipal park, parkway, golf course, and country club areas will probably need to be increased by 1,000,000 acres each, or nearly double the area at present utilized for those purposes. State and county parks should be increased to a total of 10,000,000 acres, the area in national parks and monuments to a total of 32,000,000 acres. The total area of public land which should be devoted primarily to recreation, not including special areas for wild life refuges, equals nearly 50,000,000 acres.

Land needed for wild life.—Wild life refuges to prevent the extinction of wild life species, and to promote their increase, have been established by the federal government and by several states. The aggregate of these refuges does not constitute a large proportion of the total land area of the United States. The primary purpose of much of the area is not the propagation of wild life, but other uses. Most of the land for such use in the future will be supplied mainly by multiple-use areas. There is, however, a great need for additional migratory-bird refuges; these will come largely from marshlands and other lands of little present utility. It is proposed that migratory-bird refuges should be increased to 17,000,000 acres, and that refuges for upland game should be increased to 21,000,000 acres.

RECOMMENDED LINES OF ACTION

The foregoing summaries of the National Resources Board report may be termed considerations pertaining to the desirable size and layout of the "physical plant" for the great land-use industries or activities, such as agriculture, forestry, wild life, and recreation. These are considerations of land as a national resource as the physical basis of much of our existence.

The résumé of the probable land requirements and resources shows that there is enough land to provide adequately

for the future needs. The question may then be raised: If this is the situation, why the need for land planning or the development of a national land program? It is true that, if put to their proper uses and adequately conserved, our land resources are ample to provide for a higher standard of living than is enjoyed at present. At the same time, there is ample evidence that there are maladjustments in land use, and extensive and rapid deterioration of our very valuable soil resources which prevent the attainment of a higher plane of well-being. This misuse of our land results in decreasing the opportunities of our people and, unless checked and corrected, will lead to a lowering of our standard of living.

A substantial body of recommendations for policy and procedure were included in the report. It is not desirable in this connection to consider in detail the exact content of those statements. However, it may be worth while to consider the recommendations pertaining to policy and procedure as examples of certain general types of action involved in the execution of a land plan. It should be noted that the general nature of the recommended lines of procedure is strongly influenced by a few dominant social factors. Practically all land is in private ownership. This ownership, furthermore, has always been a highly individualistic type of holding, and both private ownership and individualism have been woven into the web of our democratic form of government. These factors require that the execution of a land plan shall be accomplished by voluntary action rather than coercion, that changes in the use of land, which are sufficiently great to alter the nature of the property rights in land, should be accomplished by due compensation. These factors require that a program for modifying land use, which involves immediate action, shall fall within the following lines of action: (1) public (acquisition) purchase; (2) regulation of private property through the police power; (3) directing the private use of land through voluntary associations of land users; (4) through assistance in the form of subventions or favorable credit or taxation policies.

Public purchase is at once the most obvious and most dramatic manner of carrying out certain phases of a land program. A limited use of this method was recommended in the

National Resources Board report, and is being acted upon in the current land program. It should, however, be plainly understood that, with minor exceptions in the case of parks, this recommended purchase is projected along purely voluntary lines. It is not intended that persons shall be forced to sell their farms under duress of eminent domain proceedings; rather it is expected that the offer of fair value for the farm, plus the necessary assistance in resettlement, will induce the farmer to sell through the prospect of greater economic opportunities.

Public purchase was recommended as being necessary to achieve the desired use of land in a number of situations. The preliminary survey made by the state consultants of the National Resources Board indicated that some 450,000 farm families are living on farms so poor and unproductive that their future is questionable. It was believed that a reasonable land program would eventually assist most of these people to move elsewhere through the combined plan of aid in creating new economic opportunities and purchase of the present holding. For purposes of creating a new balance between public and private ownership of forest lands, and insuring timber production in areas now being neglected, a public purchase program of some 178,000,000 acres of forest land was recommended. Likewise, federal purchase appears to be the only manner in which adequate refuges, sanctuaries, and feeding grounds can be provided for migratory waterfowl. As a means of rehabilitating the Indians under a self-supporting land-use economy, some 10,000,000 to 16,000,000 acres were recommended for federal purchase for additions to Indian reservations. A considerable part of this land is now in white ownership of scattered tracts throughout the reservations. Similarly, public acquisition was recommended for additions to present parks and recreational ground facilities. Much of this land should be acquired and controlled by the states or localities according to range of interest in use of the areas. In addition to these main instances of recommended federal purchase, it may be necessary to use acquisition to control some of the worst instances of erosion, or to assist in other land-use adjustments. While these enumerated cases of recommended

purchase present major problems, in the aggregate they deal with only a very small part of the total land area. In most parts of the country it appears possible to devise means of modifying the use of the greater portion of the land sufficiently to conserve the basic resource, while it remains in private ownership.

Regulations of land use by states, under the police power, offer considerable promise of directing the use of land to more desirable objectives. The most striking use of the police power developed in recent years is that of zoning rural lands. The possibilities of this instrument were appraised in the Resources Board report, and its use included in the recommended lines of action. Other recommendations were directed to state regulation of land settlement through licensing of real estate dealers and strict supervision of the activities of land-selling agencies. State inspection and certification of land-settlement projects offered for sale was also recommended. It was recognized that, to some extent, the same objectives of regulating the activities of land-settlement companies might be achieved by trade associations of land sellers through the imposition of fair-trade practices.

There are a number of sections in a program of land planning where the voluntary associations of land users might be helpful in putting land to a more reasonable use. A number of these possibilities were examined in the report and recommended as means of adjustment. Grazing associations are growing up in the West which permit the collective use of range land by a number of individual operators. In general, this line of activity was deemed commendable, and is being included in the present program. However, it is recognized that in this case, as with many of the newer forms, care must be taken to keep the exclusion involved in the associations within reasonable limits. The possibilities of a trade-association approach to forestry regulations were also noted, but definite recommendations were withheld pending their efforts at this approach through timber-code agencies.

It was recommended that farmers be encouraged to form associations for the co-operative control of erosion. Already the Soil Conservation Service has under way a very extensive

and commendable program of erosion control. However, much of their activity falls along a fourth line of activity, that of inducements to private owners, under what may be generally called subventions.

A great variety of social problems have been approached through the use of grants in aid, or subventions. The merit of this approach rests in possibilities of creating situations where material assistance may be given individuals, and their choices directed along lines of action which serve the general welfare. This line of activity appears to have a definite place in a program of erosion control and certain forms of forest activity, such as road construction and fire protection. There are almost innumerable instances where public action to direct land use may well take this form.

This very brief summary of recommendations, as given in the report of the land committee of the National Resources Board, is intended to indicate the general nature of the effort rather than to provide a complete statement of its contents. In general, the plan was to set up the objectives of a reasonable land-use program which requires that the land be used in such a manner as to serve the general welfare. Numerous adjustments will be required to bring our land-using plant to a satisfactory basis. These adjustments must be conditioned by both the private ownership of land and the planning procedures consistent with a democratic form of government.

The land plan, as embodied in the report of the National Resources Board, is a forward step in land planning, but, of course, not a final or finished plan. For this there are at least two reasons: planning is a continuing process without final stages, and certain phases of land planning received greater emphasis than others. This report dealt essentially with the problems of land as a resource. While this approach permitted comment on almost all phases of the problem, there are certain social problems of man-to-man relationships in the use of land which could not be adequately treated in such a report. Of the more important of such problems, farm tenancy should be noted.

No land policy can be complete without a definite program aimed toward the solution of certain farm-tenancy problems.

No one who cares for the development of a rewarding rural life in America can fail to become alarmed at the recent increase in tenancy which has taken place despite all our land policies intended to encourage individual farm ownership. One of the first constructive steps to be taken to correct this situation now lies with the Congress of the United States in the form of the Bankhead-Jones Farm Tenant Bill, which passed the Senate during the recent session of Congress. This Bill provides for the establishment of a corporation empowered to make loans to tenant farmers in order to permit them to become farm owners.

Needless to say, there are many more problems than those of credit involved in any large-scale attempt to turn back the trend of tenancy in the United States. The effect which this system has had, particularly in some of the cash-crop regions where the short-sighted pressure for immediate maximum rentals has forced the virtual "mining" of soil resources, necessitates that the problem be fairly and squarely dealt with in the process of developing a sound land policy.

THE LAND PROGRAM

Under the present administration the federal government has embarked upon what may be termed a land program. It was organized and set in motion at a time approximately coincident with the preparation of the land report of the National Resources Board. Many of the same persons were in responsible positions in both undertakings, so that the two may be considered expressions of the same general set of ideas. Hence, while the land program had been in operation for several months prior to the completion of the report, many of the conclusions and recommendations of the report were embodied in the program as working principles.

The land program, then, may be considered as the major effort now being made to carry out the recommendations of the Land Planning Committee of the National Resources Board. Work is going forward along many supporting lines, involving research into problems of tenancy, working with state and county officials in the interest of zoning and fiscal adjustments, and other activities. However, the land pro-

gram is at once the newest and most important line of effort.

In attempting to understand the land program, it will not be amiss to consider the shifts in direction of emphasis which have occurred in its brief history as simply another problem which public administrators face in attempting to plan and execute a major social effort within the current complex of social and political relations.

Impulses contributing to the initiation of a government land-use program arose from several sources. Land economists in the Department of Agriculture had long worked on plans for the public acquisition and development of submarginal agricultural lands. Considerable feeling was prevalent in some quarters that, in view of the acreage-reduction program of the Agricultural Adjustment Administration, the increase in crop land resulting from the establishment of irrigation projects through the Public Works Administration should be offset by withdrawals of proportionate amounts of submarginal land. Finally, several federal agencies, in whose work the acquisition of land played an important part, urged the initiation of a program which would make possible the realization of their plans for conservation and recreational development.

After several months of planning and discussion, an organization was worked out which combined the efforts of the Land Policy Section of the Agricultural Adjustment Administration, the Bureau of Biological Survey of the Department of Agriculture, the National Park Service, and the Office of Indian Affairs of the Department of the Interior. A net amount of $28,390,000 was allocated to the program, the funds being administered by a special section formed in the Federal Emergency Relief Administration and known as the "land program," which served as an overhead co-ordinating agency. Regional directors of the Land Policy Section were appointed to serve as the regional directors for the land program as a whole, in order to facilitate the unification of planning and acquisition procedure in the field.

During the first months of its existence, the land program was primarily concerned with the purchase of submarginal

agricultural land which could be devoted to more socially desirable purposes. As time went on, certain changes in policy were made, so that it became, in a broad sense, a land-adjustment program. Areas were placed in public ownership which, even though not outstandingly submarginal for agriculture, were, nevertheless, devoted to some use other than that for which they were best suited. In many cases it proved very difficult to reconcile the needs of specific areas for recreation, wild life conservation, or Indian rehabilitation, with the basic planning of a submarginal-land-retirement program. Sound judgment discerned the wisdom of doing one thing well, rather than courting failure by trying to do too much at once.

Each of the four technical agencies listed above maintained a field staff financed by the land program of the Federal Emergency Relief Administration. Locations for projects were selected by these field offices, and, in co-operation with the regional directors, procedure was laid down for the appraisal and optioning of the area. Final plans, consisting not only of options and appraisals, but of written and graphic material justifying the project from the land-planning viewpoint, were then transmitted to Washington, where, after approval by the Federal Emergency Relief Administrator, funds were allocated for the consummation of plans.

Operating in this manner, the program encountered certain difficulties in spite of its obvious advantages. The loose form of organization did not lend itself to the perfection of a smoothly working administrative machine. Furthermore, the resettlement aspect of the program was intrusted to the Division of Rural Rehabilitation of the Federal Relief Administration and its state rural rehabilitation corporations. Resettlement plans were an important element in discussing land purchase with resident farmers, and the lack of any centralized control over both phases of the work had its disappointing consequences.

However, in spite of difficulties, the field activities of the land program produced notable results. Over 11,000,000 acres of land have been optioned, and a considerably larger amount has been appraised. Approval has been given to projects involving over 9,000,000 acres of land.

On May 1, 1935, the land program was transferred to the Resettlement Administration, in which a Division of Land Utilization has been formed to handle land-purchase projects and conduct basic land-use planning work. Resettlement of families from the lands removed from production under the acquisition program is carried out by a Division of Rural Resettlement. The land program has been broadened to include 137 development projects through which the purchased lands are being improved as forests, parks, and grazing areas, with relief labor.

A view of the several types of projects will be of interest, not only to indicate the breadth of the program, but also to demonstrate how the activities of the land program fit into the major developments of a national land policy which have already been discussed.

Agricultural projects are those in which the primary-end use of the land to be acquired was forestry, grazing, or allied conservation uses. The planning of projects involving such use was intimately associated with the land-use studies carried out by the National Resources Board, some of the same personnel being associated with both fields of work. In every case, the agricultural projects are located in the most serious land-problem areas of the given states. These projects are designed as demonstrations, to test the validity of the thinking of experts in the field, and to permit of profiting by experience. It is obvious that the problems encountered in the adjustments on the first projects will bring many factors into a new perspective. Hence it has been deemed essential that the land projects be so organized that experience gained in the earlier projects may be appraised and turned to account in later work.

Briefly, the major problems with which these agricultural projects are concerned include the following: (1) the wastage of soil resources, forest, and grass cover through erosion and other consequences of the improper use of land; (2) the wastage of human resources through the dependence of rural populations upon land unfit for cultivation; and (3) the wastage of financial resources of counties and states through the costs of public services, such as roads and schools, in submarginal

areas where the land yielded insufficient tax return to cover these costs. A project is considered worth while when it can be satisfactorily shown that public acquisition of lands in the selected area, coupled with the resettlement of the present residents on better land, will provide an effective demonstration of one means whereby these problems could be solved.

Specific problems have presented themselves in various parts of the country, so that the program appears, superficially, quite different as between one project and another. In the northeastern states, the basic problem is that of worn-out lands on which agriculture continues to be practiced without benefit to the farmers, and often with detriment to the community at large. Projects are under way which involve the acquisition of poor farm lands to be devoted largely to recreation, forestry, and wild-life conservation. The federal land program is thus harmonized with the program already initiated by the states, while in turn the results of the demonstration work now commencing will undoubtedly be of value to the development of land-adjustment work in both similar and different land regions.

Throughout the forested regions of the East, the major end-use of the land purchased under this program will be forestry, with game conservation and recreation allied whenever this seems feasible. In some parts of the South, the restoration of the forests with their game hunting and fishing, as well as their timber, will in effect look toward a restoration of one of the chief economic resources of the small communities which have become dependent upon the cultivation of poor land since the cutting of the forest and the exhaustion of the soil.

In the western plains, the problem of land use has been somewhat exaggerated by recent dust storms and other evidences of drought. Rumors have been circulated that the federal government would find it necessary to depopulate large areas of the plains states lest the plains be reduced to the condition of the Sahara Desert. An intelligent view of the situation reveals, however, that the problem dramatized by the dust storms is merely that of placing the arid lands in their best use. Such dust storms have been the rule in certain of the more arid plains year after year, even though the

eastern seaboard has not often received visible evidence of their existence. The purpose of the land program in the western plains region is to facilitate the conversion of land to a type of use to which it is adapted. In many areas this means a change from arable farming to grazing, and the resettlement of some families on more moist lands. When this has been accomplished on a broad scale, it is to be hoped that the results of future droughts will be mitigated, not only because the soil will not be so easily lifted from the earth, but even more because there will be fewer persons in a position of dependence upon the cultivation of these portions of the plains which do not lend themselves to successful farming.

The importance of federal land-use experimentation is nowhere more clearly demonstrated than in the lake states of Michigan, Wisconsin, and Minnesota, where large areas of cut-over forest lands are found. The dominating problem in this portion of the country has been that of the isolated settler on poor land, who has become, either unwillingly or purposely, a burden to the local community. Perhaps because of the pressure of this financial burden, these three states have made great progress in studying the problem of the submarginal settler, and in initiating remedial programs. The federal land program has been able to step into the picture with sufficient funds to carry out a few large-scale demonstration projects which should go far toward pointing a way to the eventual cleaning up of this unfortunate situation.

In northern Wisconsin, studies first carried out through the University of Wisconsin led to the adoption of zoning regulations by the counties in accordance with a state enabling act. Those regulations definitely prohibited the establishment of any further permanent settlements in those areas which were classified as unfit for agricultural use. They were to be reserved for forestry, recreation, or summer homes, but no settler was to be permitted to require the county to keep a road open to his lonely estate, or to pay large sums for transporting his children to distant schools. By purchasing the existing farms in these restricted areas, the federal government is making immediately effective these regulations which, of themselves, could not be retroactive. The lands purchased are to be

united with federal, state, or county forests, depending upon their location.

Projects planned by the three other technical agencies have been, as far as possible, co-ordinated with these basic land-use plans. In each case, however, the end-use of the acquired acreage differs.

Among the most interesting projects are those of the National Park Service. This agency has directed its efforts toward the selection of areas of poor farm land lying within fifty miles of large centers of population, and possessing natural features conducive to recreational development and use. The projects vary in size from small, wayside picnic areas of 35 or 40 acres, to large tracts of land embracing 10,000 acres, and affording an opportunity for broad and varied recreational use. In most cases it has been planned to turn these areas over to the states for administration after the purchase of the land has been completed, and considerable development work has been undertaken.

Projects of the Biological Survey and the Office of Indian Affairs have been directed more toward specialized programs. The former agency, having as its particular responsibility the protection of migratory waterfowl, is utilizing lands for the establishment of resting and nesting areas along the major flyways traversed by the wild ducks and geese in their annual migrations. Through the purchase program, the Indian Office has acquired grazing and other lands which are needed in the program of Indian rehabilitation. In this way, particularly through the encouragement of grazing, the Indian tribes are to be helped toward economic independence.

The land program, including the resettlement work, is an effort to improve the use of both our land and our human resources. It does not encompass the whole of land planning. In its present stages it is based primarily upon public acquisition, yet this is but one means of handling the many complex problems of adjusting land use. These other means have been amply outlined in the foregoing pages, and are included in the land-planning work of both the federal and state governments.

The broad program of land planning now under consideration is an outgrowth of our historic policy with reference to land. The failure of that policy to protect the interests of the American people through conserving our basic resources, both human and natural, has brought forth land planning as a major social effort. We cannot complacently permit our forest resources to be depleted, our fields to erode away, or great numbers of our rural population to waste their lives in an isolated poverty which also ruins the land they occupy. Nothing short of national land-use planning is adequate to the task. We are proceeding gradually, with a sincere attempt to move wisely. The outlines of a reasonable land plan are becoming more clear. Public ownership will be at a minimum; private owners of land will continue to occupy and control the preponderant part of the soil. But the public interest requires that practice in using that land shall be adopted with the clear recognition that it is both private property and a great social heritage.

SUGGESTIONS FOR FURTHER READING

George Soule, *The Idea of Planning* (University of Chicago Press, "Economics Radio Lecture Series," No. 15, 1932).

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